

REMARKS

In the present Amendment, Claim 4 has been rewritten into independent form. Claim 5 has been amended to depend from Claim 4. Claims 1-3 and 6-10 have been cancelled without prejudice or disclaimer. No new matter has been added, and entry of the Amendment is respectfully requested.

Upon entry of the Amendment, Claims 4 and 5 will be pending.

In paragraph No. 3 of the Action, Claims 6-10 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

In paragraph No. 4 of the Action, Claims 6-10 have been rejected under 35 U.S.C. § 101.

As noted, Claims 6-10 have been cancelled, rendering the §112 rejection and the §101 rejection moot.

In paragraph No. 6 of the Action, Claims 1-3 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Toda et al (US 2002/0038861).

As noted, Claims 1-3 have been cancelled, rendering this §102(b) rejection moot.

In paragraph No. 10 of the Action, Claims 4-5 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Toda et al.

Applicants submit that this rejection should be withdrawn because Toda et al does not disclose or render obvious the present invention.

Present Claim 4 relates to an ultraviolet excited light-emitting device comprising a phosphor which comprises a compound represented by the formula (3);



wherein $0.1 < b \leq 0.4$ and $0 < c \leq 0.1$.

In contrast, Toda et al discloses a compound represented by the following formula of $\text{Ca}_{1-c}\text{Sr}_c\text{Eu}_d\text{MgSi}_2\text{O}_6$, where $0 < c \leq 0.1$ and $0 < d \leq 0.1$

The Examiner acknowledges that Toda et al does not teach a Sr content of greater than 0.1.

To make up for the lack of teaching, the Examiner relies on the disclosure of Example 1 in Toda et al and contends that “such a modification would have been motivated by the teaching of Toda that Sr contents up to 0.1 produce a working phosphor, and the phosphor of example 1 in Toda which teaches a Sr content of 0.485 which would lead one skilled in the art to conclude that Sr contents between these values would also be viable.”

However, the disclosure of Example 1 in Toda et al seems to include typographical errors.

It is reasonable to consider that Sr content in phosphor of Example 1 in Toda et al is 0.0485 and that the phosphor of Example 1 is represented by the formula

$\text{Ca}_{0.9215}\text{Sr}_{0.0485}\text{Eu}_{0.03}\text{MgSi}_2\text{O}_6$ because a molar ratio of starting materials is as follows:

CaCO_3 :	0.9215
SrCO_3 :	0.0485
Eu_2O_3 :	0.015
$(\text{MgCO}_3)_4\text{Mg}(\text{OH})_2 \cdot 5\text{H}_2\text{O}$:	0.2
SiO_2 :	2

On the other hand, $\text{Ca}_{0.9215}\text{Sr}_{0.485}\text{Eu}_{0.03}\text{MgSi}_2\text{O}_6$ was printed in Toda et al and it might have to be acknowledged that Example 1 in Toda et al discloses a specific phosphor with the formula $\text{Ca}_{0.9215}\text{Sr}_{0.485}\text{Eu}_{0.03}\text{MgSi}_2\text{O}_6$.

However, even though Toda et al discloses a specific phosphor with the formula $\text{Ca}_{0.9215}\text{Sr}_{0.485}\text{Eu}_{0.03}\text{MgSi}_2\text{O}_6$, Toda et al as a whole fails to teach a phosphor with Sr contents of more than 0.1 and not more than 0.4 as recited in present Claim 4.

Further, as shown by the comparison of Reference, Example 1 and Examples 2-4 at pages 10-13 of the specification, when the Sr content is less than 0.1, the brightness of the ultraviolet excited light-emitting device is much lower. The results of the Reference and Examples 1-4 are summarized in the following table.

Example	Compound included in phosphor	Sr content	Brightness of the device
Reference	$\text{Ca}_{0.992}\text{Eu}_{0.008}\text{MgSi}_2\text{O}_6$	0	100
1	$\text{Ca}_{0.932}\text{Sr}_{0.06}\text{Eu}_{0.008}\text{MgSi}_2\text{O}_6$	0.06	136
2	$\text{Ca}_{0.792}\text{Sr}_{0.2}\text{Eu}_{0.008}\text{MgSi}_2\text{O}_6$	0.2	213
3	$\text{Ca}_{0.692}\text{Sr}_{0.3}\text{Eu}_{0.008}\text{MgSi}_2\text{O}_6$	0.3	226
4	$\text{Ca}_{0.692}\text{Sr}_{0.296}\text{Eu}_{0.012}\text{MgSi}_2\text{O}_6$	0.296	231

Toda et al does not teach or suggest the unexpectedly superior results provided by the present invention. Accordingly, the present invention is patentable over Toda et al.

In view of the above, reconsideration and withdrawal of the §103(a) rejection of Claims 4-5 based on Toda et al are respectfully requested.

In paragraph No. 12 of the Action, Claims 1-4 and 6-9 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as allegedly being unpatentable over Claims 1-7 of co-pending Application No. 10/556,680.

Without admitting that this double patenting rejection is proper, Applicants submit herewith a Terminal Disclaimer to obviate the rejection.

In paragraph No. 13 of the Action, Claims 1, 3, 6 and 8 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as allegedly being unpatentable over Claims 1, 3 and 8 of co-pending Application No. 10/575,466.

As noted, Claims 1, 3, 6 and 8 have been cancelled, rendering this rejection moot.

Allowance is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

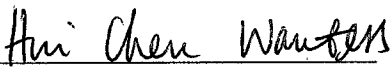
Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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CUSTOMER NUMBER


Hui C. Wauters
Registration No. 57,426

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